

303-01B Engine - 3.5L Duratec (209kW/284PS)
Removal and Installation

2015 F-150
Procedure revision date: 10/1/2014

Lower Intake Manifold

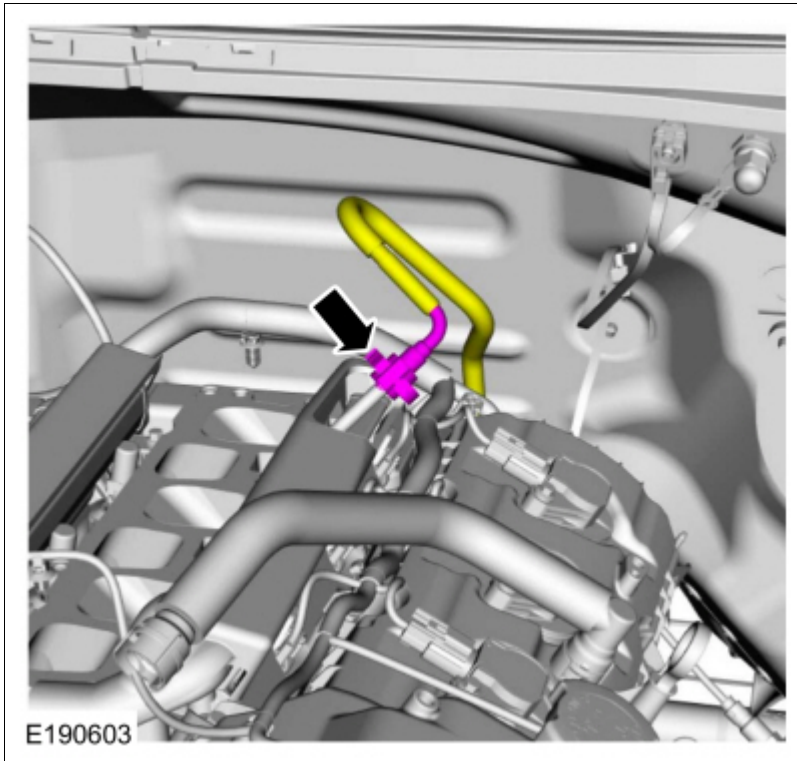
Removal

NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

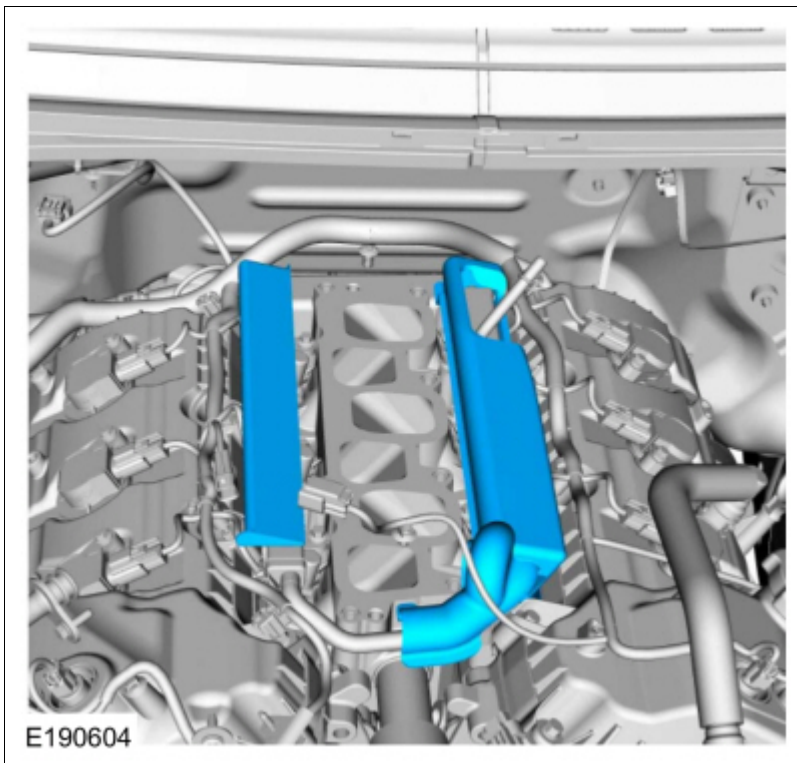
NOTE: It is not necessary to remove the fuel rail from the intake manifold assembly.

1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: [Jacking and Lifting - Overview](#) (100-02 Jacking and Lifting, Removal and Installation).
2. Release the fuel system pressure.
Refer to: [Fuel System Pressure Release](#) (310-00B Fuel System - General Information - 3.5L Duratec (209kW/284PS), Removal and Installation).
3. Disconnect the battery ground cable.
Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, Removal and Installation).
4. Drain the cooling system.
Refer to: [Cooling System Draining, Vacuum Filling and Bleeding](#) (303-03B Engine Cooling - 3.5L Duratec (209kW/284PS), Removal and Installation).
5. Remove the upper intake manifold.
Refer to: [Upper Intake Manifold](#) (303-01B Engine - 3.5L Duratec (209kW/284PS), Removal and Installation).
6. Disconnect the fuel tube quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00B Fuel System - General Information - 3.5L Duratec (209kW/284PS), Removal and Installation).





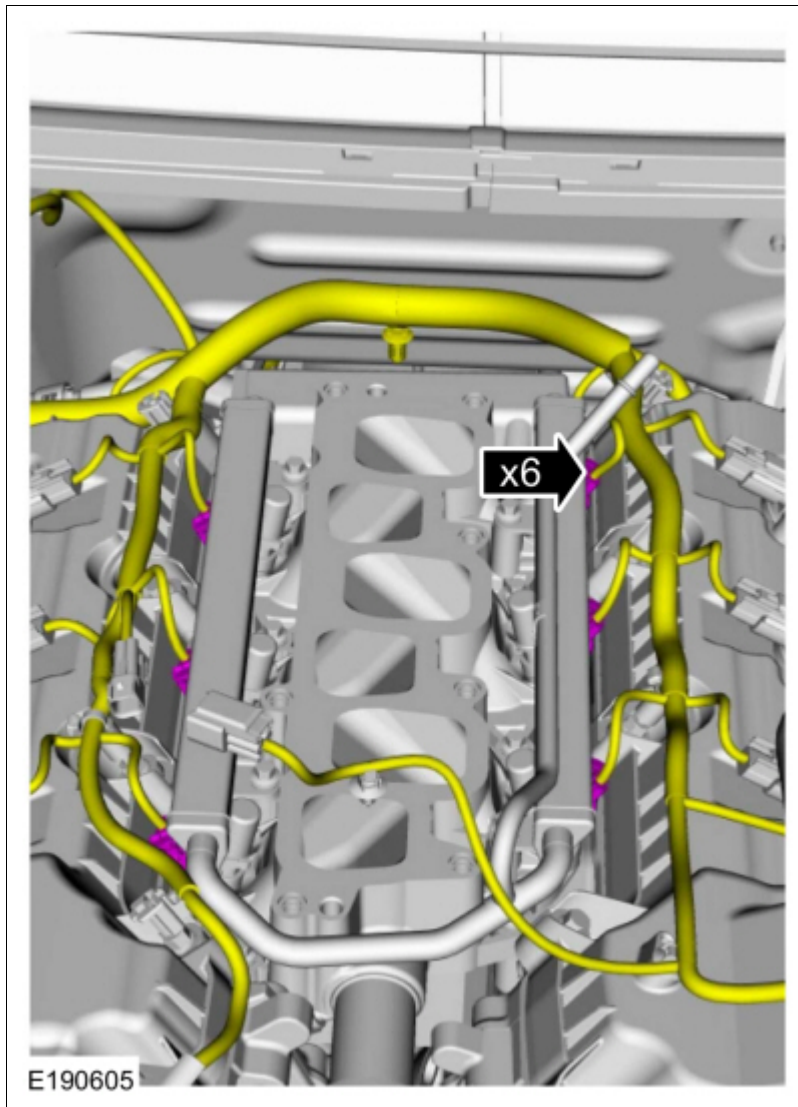
7. Remove the fuel rail sound insulators.



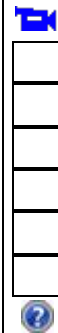
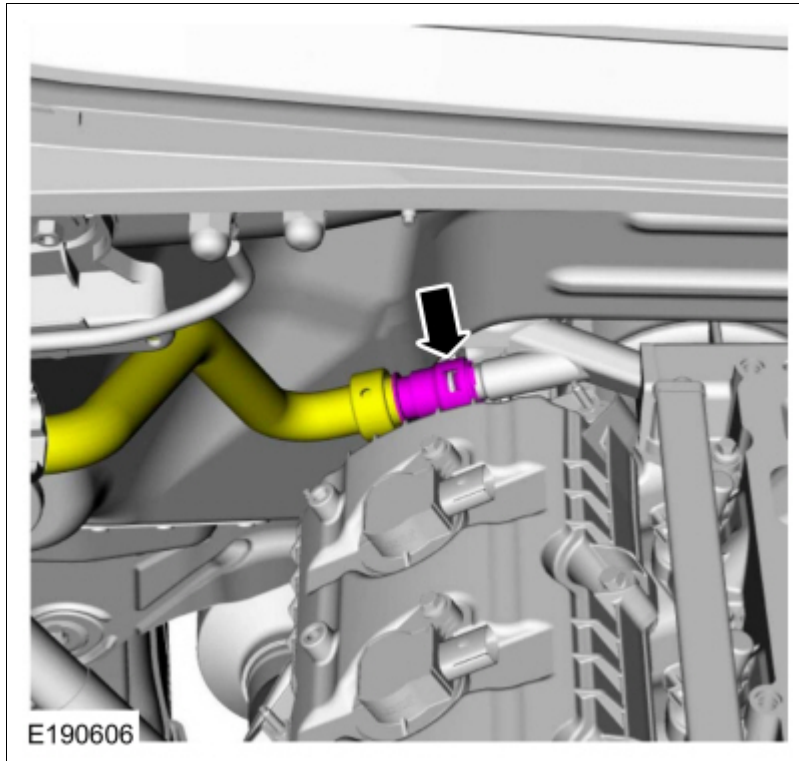
8. Remove the thermostat housing.
Refer to: [Thermostat Housing](#) (303-03B Engine Cooling - 3.5L Duratec (209kW/284PS), Removal and

Installation).

9. Disconnect the fuel injector electrical connectors.

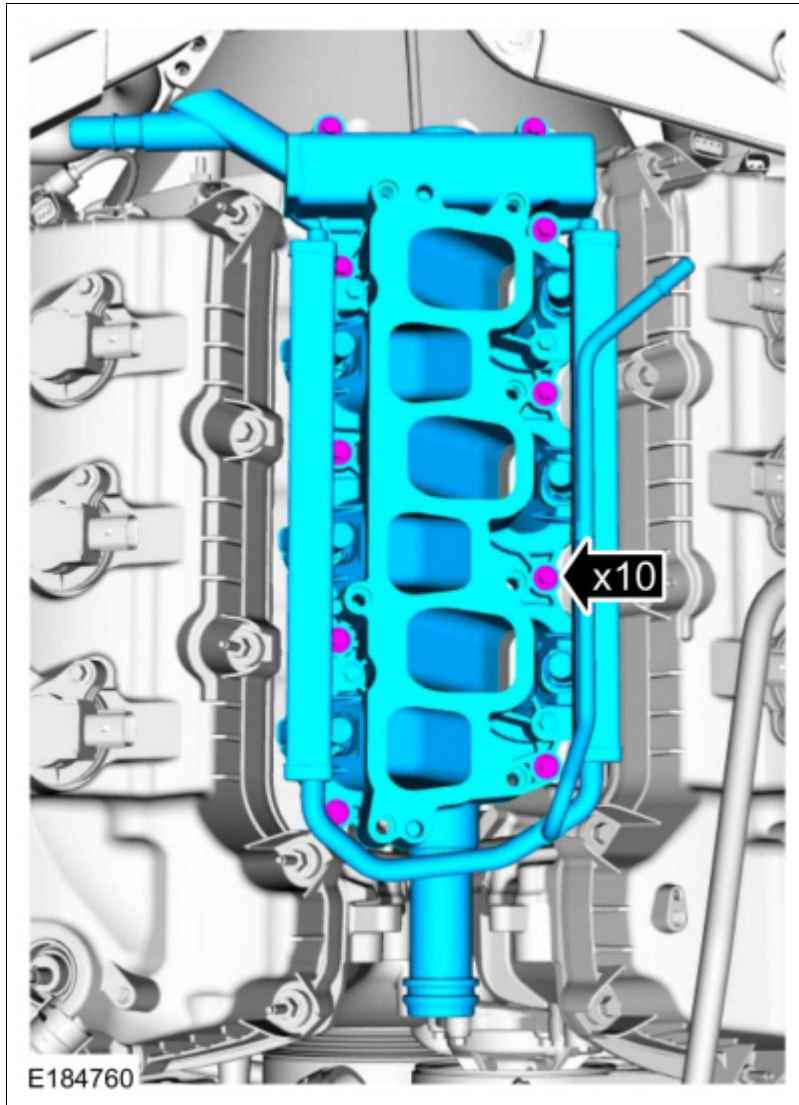


10. Disconnect the coolant tube from the lower intake manifold.



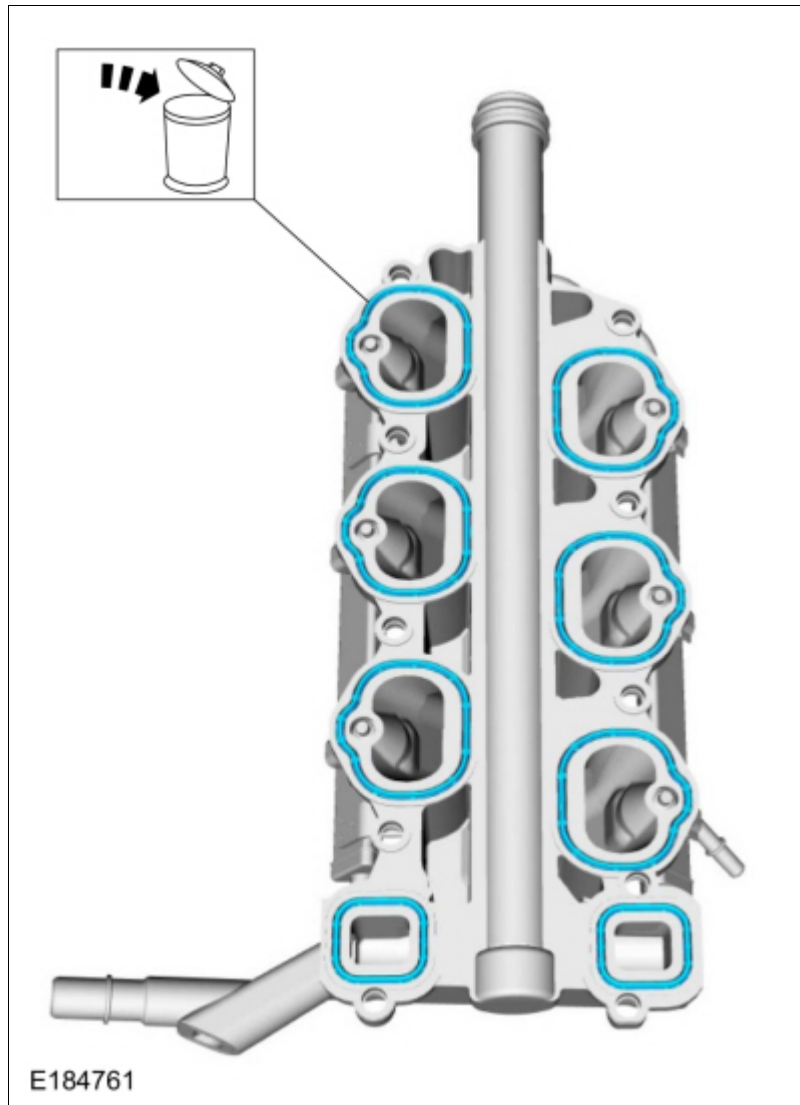
11. Remove the bolts and the lower intake manifold.





12.

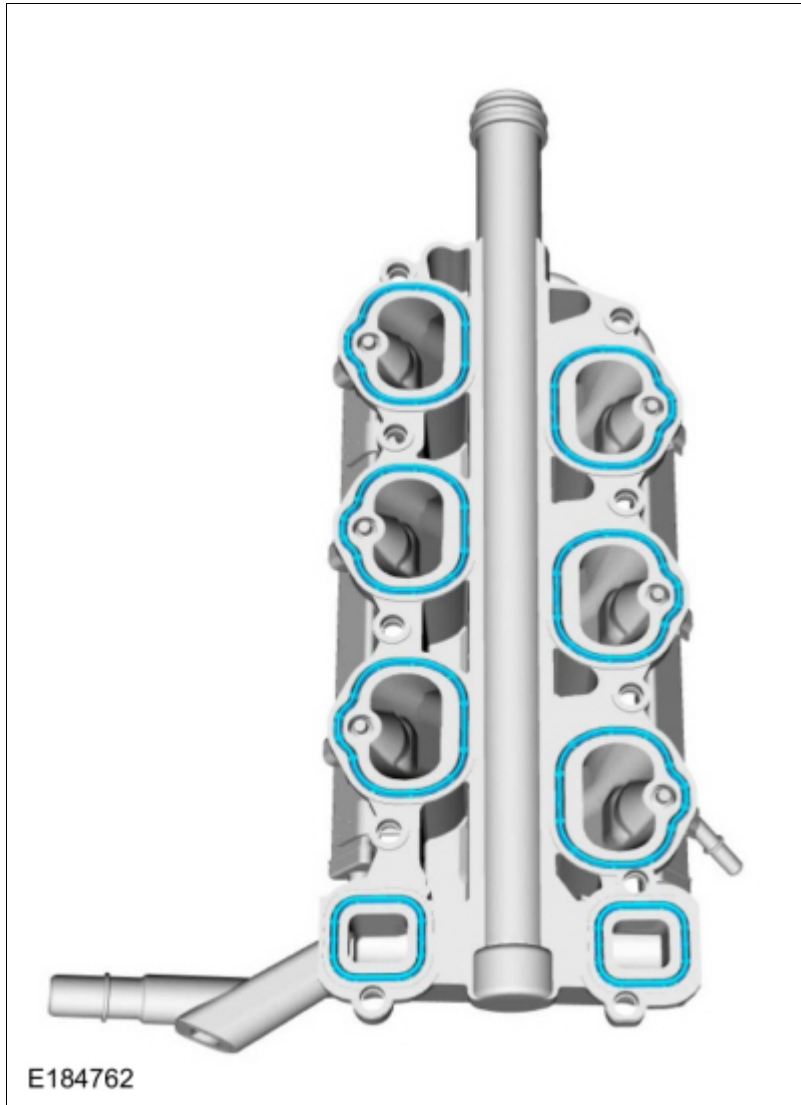
- Remove and discard the lower intake manifold gaskets.
- Clean and inspect all sealing surfaces.



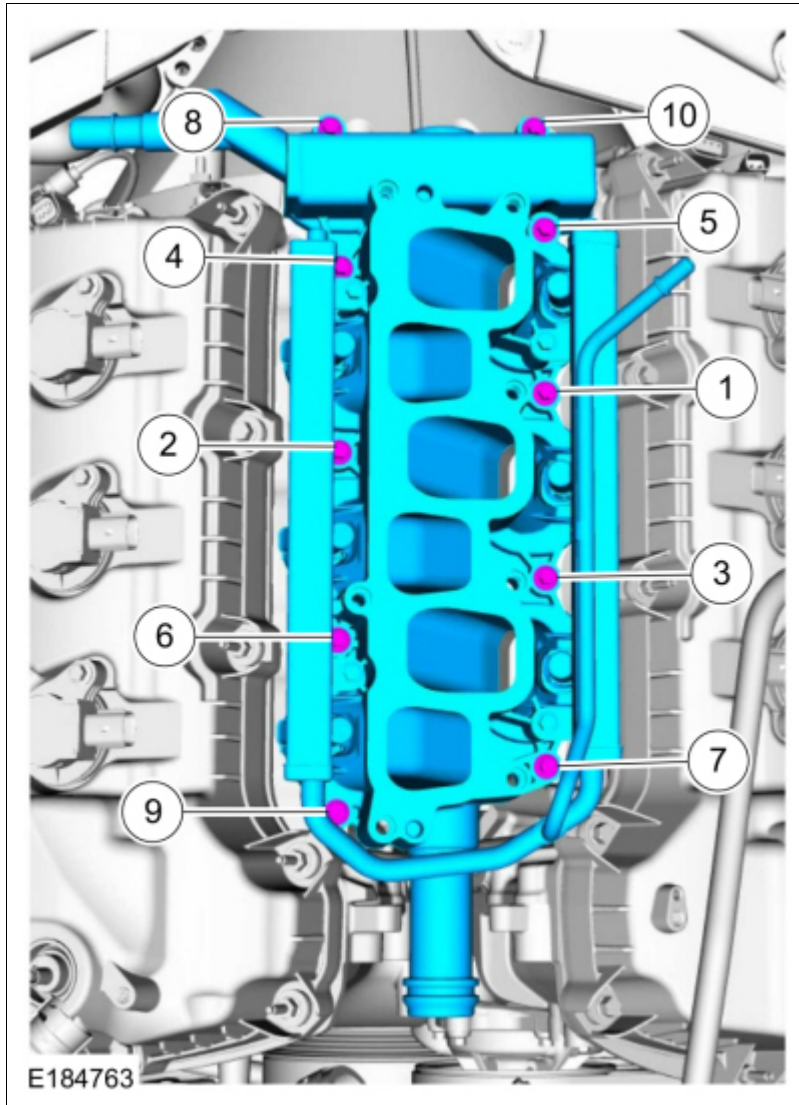
Installation

NOTICE: If the engine is repaired or replaced because of upper engine failure, typically including valve or piston damage, check the intake manifold for metal debris. If metal debris is found, install a new intake manifold. Failure to follow these instructions can result in engine damage.

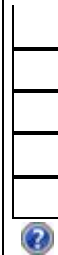
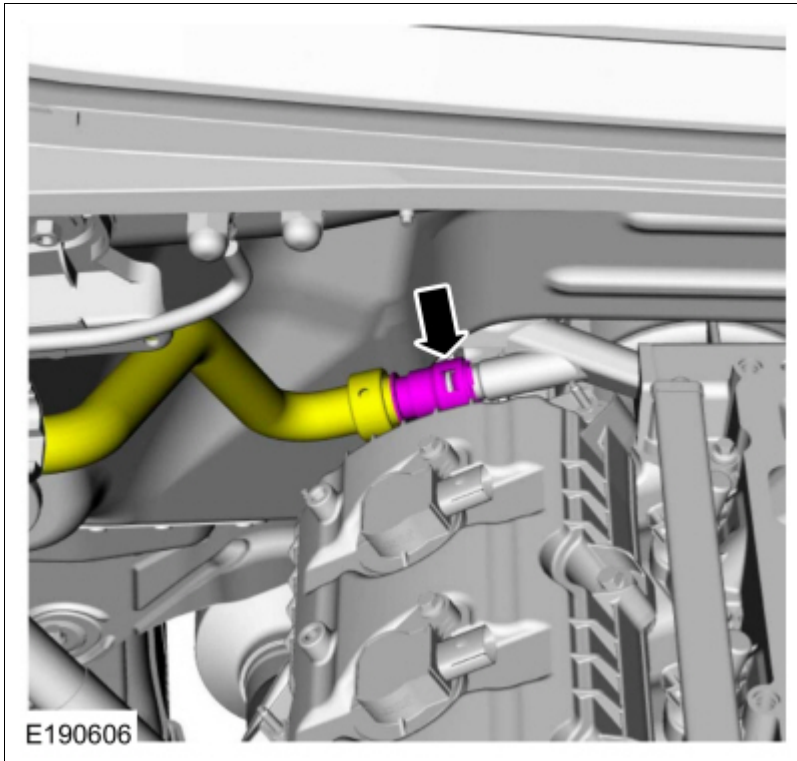
1. Install the new lower intake manifold gaskets.



2. Install the lower intake manifold and the bolts.
Torque: 89 lb.in (10 Nm)

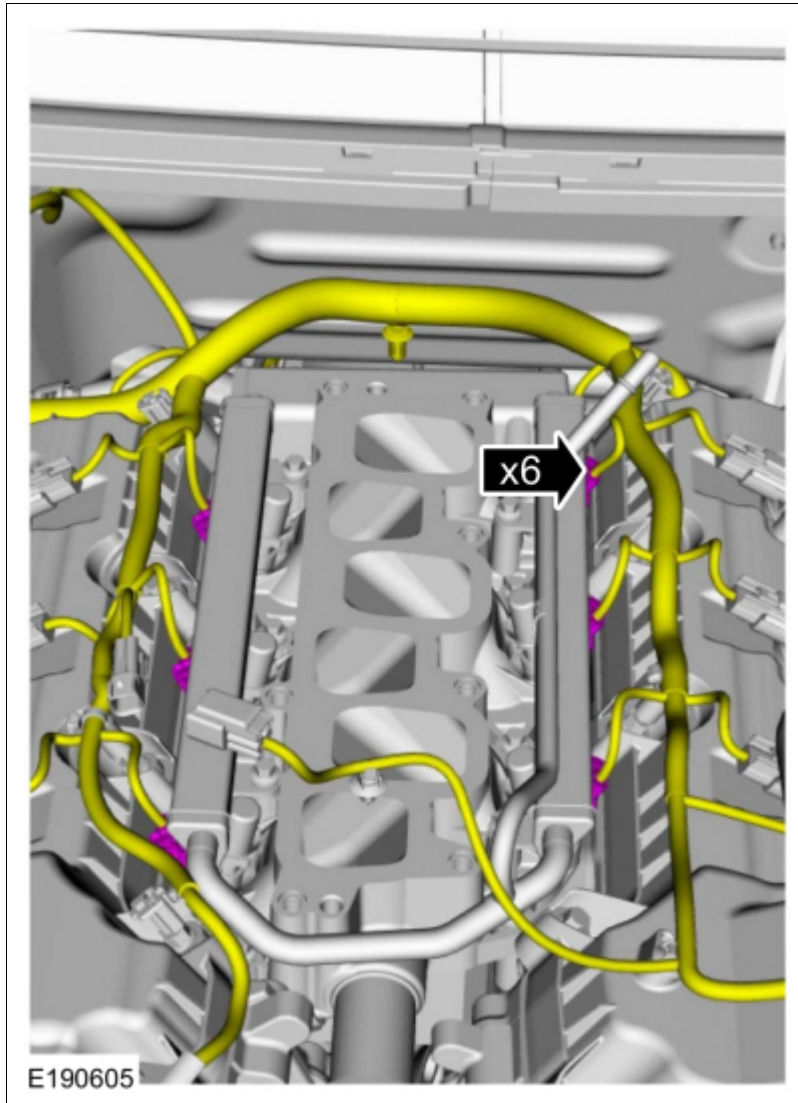


3. Connect the coolant tube to the lower intake manifold.

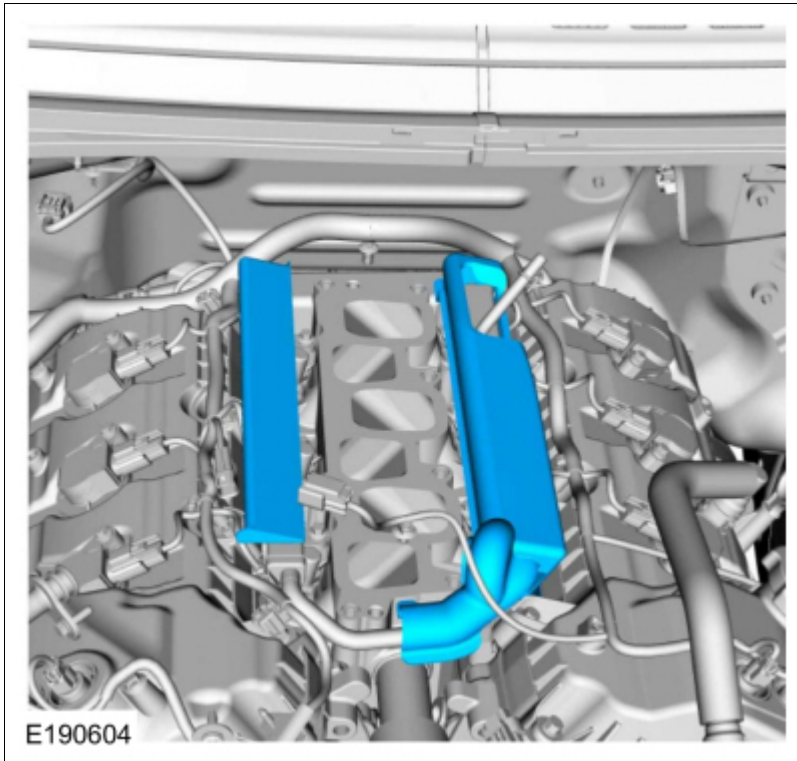


4. Connect the fuel injector electrical connectors.

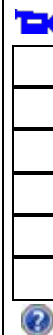
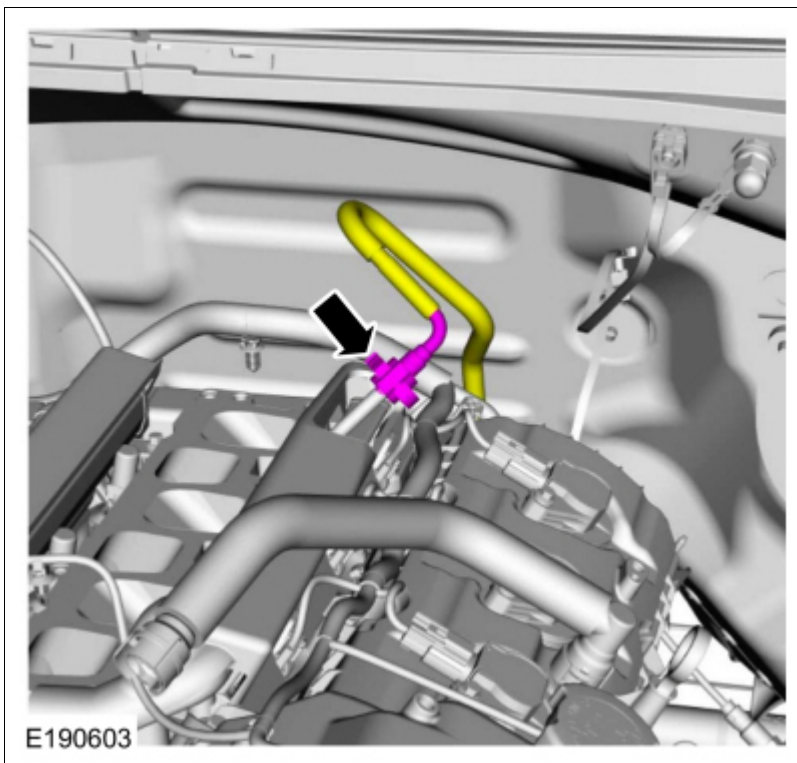




5. Install the thermostat housing.
Refer to: [Thermostat Housing](#) (303-03B Engine Cooling - 3.5L Duratec (209kW/284PS), Removal and Installation).
6. Install the fuel rail sound insulators.



- 7. Connect the fuel tube quick release coupling.
Refer to: [Quick Release Coupling](#) (310-00B Fuel System - General Information - 3.5L Duratec (209kW/284PS), Removal and Installation).



8. Install the upper intake manifold.
Refer to: [Upper Intake Manifold](#) (303-01B Engine - 3.5L Duratec (209kW/284PS), Removal and Installation).
9. Connect the battery ground cable.
Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, Removal and Installation).
10. Fill the cooling system.
Refer to: [Cooling System Draining, Vacuum Filling and Bleeding](#) (303-03B Engine Cooling - 3.5L Duratec (209kW/284PS), Removal and Installation).

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